IMPROVED DRYWALL JOINT AND SYSTEM AND PROCESS FOR MAKING

This is a continuation of U.S. Patent Application S.N. 10/144,515, filed May 13, 2002, the entire disclosure of which is hereby incorporated as if set forth fully herein.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to the field of architecture and construction. More specifically, this invention relates to the field of drywall construction, which is the most common method that is used today to finish interior walls and ceilings in buildings such as new homes and offices.

2. Description of the Related Technology

Conventional drywall is fabricated in sheets having a gypsum core that is contained within a fibrous, cardboard-like outer skin. Drywall sheets typically are approximately four feet in width by eight feet in height, although this may vary depending upon the manufacturer and the part of the world in which the product is being used.

Conventional frame-type construction involves assembling the structural portion of a wall or ceiling from a framework that is constructed of a plurality of joists, which are typically 2x4 pieces of lumber. The drywall must be fastened over the framework of joists to form the outer surface of the wall or ceiling. Since a number of drywall sheets will usually have to be applied to a particular wall or ceiling surface to completely cover the structural framework of the wall or the ceiling, the individual sheets of drywall will have to be joined together in a way that is not easily detectable to a viewer after the wall has been finished.

FIGURE 1 depicts a conventional drywall joint 10 that is the most typical example of the current state of construction in this area. As shown in FIGURE 1, a first drywall sheet 12 is positioned end-to-end with a second drywall sheet 14, with adjacent edges of the two sheets 12, 14 positioned together in a butt-type interface 16. Because of the irregularities that are unavoidable in joist-type construction, it is considered preferable to have the butt interfaces 16 between the different sheets of drywall positioned over an open area within the structural framework, and not directly over one of the joists. Instead, a support member 18 is positioned behind the two drywall sheets 12, 14 in order to provide rigidity to the joint and give alignment to the drywall sheets 12, 14 during the joining process. As FIGURE 1 shows, the drywall sheets are first joined to the support member 18 by a pair of drywall screws 20, 22. After the drywall screws 20, 22 have been so secured, a second pair of screws 24, 26, which are closer to the butt interface 16, are then inserted and secured between the support member 18 and the respective drywall sheets 12, 14.

At this point, the first and second drywall sheets 12, 14 are joined together structurally, but are still aesthetically quite distinguishable. To hide the visible crack of the butt interface 16, a length of adhesive mesh drywall joint tape 28 is applied to the crack at the butt interface 16, and a substance that is known as joint compound 30, or more commonly by the term "mud," is trowled on top of the tape 28 and is spread as smoothly as possible outwardly over the exterior surface of the two drywall sheets 12, 14 so as to disguise the joint 10 from view as effectively as possible.

Unfortunately, the added thickness of the joint tape 28 and the joint compound 30 creates a bulge 32 at the conventional drywall joint 10. A skillful contractor will be able to disguise the bulge 32 as well as it can be disguised, mainly by spreading the joint compound outwardly for some distance, but there are some instances in which the bulge 32 will remain noticeable, such as when there is overhead spot lighting that will strike the bulge 32 obliquely, which will tend to make the bold 32 very evident to even the least discerning viewers.

In addition to the disadvantages of the conventional drywall joint 10 that are discussed above, it takes a great amount of time and material to smooth the conventional drywall joint 10 when one considers the number of such joints that will have to be made in the construction of a large building such as a house.

A need exists for an improved drywall joint and a system and process for making such a joint that will reduce the amount of labor and materials necessary to form the joint, and that will enhance the aesthetic value of the finished joint.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the invention to provide an improved drywall joint and a system and process for making such a joint that will reduce the amount of labor and materials necessary to form the joint, and that will enhance the aesthetic value of the finished joint.

In order to achieve the above and other objects of the invention, a method of making a drywall joint according to a first aspect of the invention includes steps of positioning a butt block that has a recessed surface on an interior side of a joint that is to be formed between a first drywall sheet and a second drywall sheet; securing at least one of the first and second drywall sheets to the butt block so that the secured sheet is made to conform in shape to the recessed surface, thereby forming a secondary recess on an exterior of the drywall sheet in the area at which the joint is to be made; and applying joint compound within the secondary recess.

According to a second aspect of the invention, a butt block for forming a drywall joint includes a first surface for engaging a first sheet of drywall; a second surface for engaging a second sheet of drywall; and recess defining structure for defining a recessed area between the first and second surfaces, the recess defining structure being constructed and arranged to be drawn into contact with butt edge areas of the first and second sheets of drywall when fully secured to the sheets of drywall, whereby the butt edge areas will be caused to form a concave secondary recess on an exterior surface of the drywall joint.

According to a third aspect of the invention, a drywall joint includes a first sheet of drywall having a first butt edge; a second sheet of drywall having a second butt edge, the first and second sheets of drywall being positioned so that the first butt edge is adjacent to the second butt edge at a butt interface; recess forming structure engaging the first and second sheets for pulling the first and second butt edges inwardly so as to define a secondary recess in exterior surfaces of the first and second sheets in the area of the butt interface; and a sealant applied in the secondary recess.

These and various other advantages and features of novelty that characterize the invention are pointed out with particularity in the claims annexed hereto and forming a part hereof. However, for a better understanding of the invention, its advantages, and the objects obtained by its use, reference should be made to the drawings which form a further part hereof, and to the accompanying descriptive matter, in which there is illustrated and described a preferred embodiment of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a fragmentary cross-sectional view depicting a conventional drywall joint;

FIGURE 2 is a perspective view of a butt block that is constructed according to a preferred embodiment of the invention;

FIGURE 3 is a fragmentary cross-sectional view depicting a first method step in a process that is performed according to a preferred embodiment of the invention;

FIGURE 4 is a fragmentary cross-sectional view depicting a second method step in the process that is first shown in FIGURE 3; and

FIGURE 5 is a fragmentary cross-sectional view depicting a completed joint that is constructed according to a preferred embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

Referring now to the drawings, wherein like reference numerals designate corresponding structure throughout the views, and referring in particular to FIGURE 2, a butt block 40 constructed according to a preferred embodiment of the invention includes a first outboard flange 42 and a second outboard flange 44. As may be seen in FIGURE 2, the first outboard flange 42 includes a first surface 46 defined by a forward portion of the flange 42. The second flange 44 likewise is provided with a second surface 48 on a front portion thereof. The purpose of first and second surfaces 46, 48 is to engage the interior surfaces of first and second sheets of drywall 12, 14, as will be described in greater detail below. The first and second surfaces 46, 48 are substantially planar, and preferably lie within substantially the same plane.

Referring again to FIGURE 2, it will be seen that butt block 40 further includes recess defining structure 50 that is embodied as a first recessed panel 52, and a second recessed panel 54. The recessed panels 52, 54 are unitary with each other and are joined at a center axis 56 that is located at the innermost point of the recess that is defined by the recess defining structure 50. The first recessed panel 52 is unitary with the first flange 42, while the second recessed panel 54 is similarly unitary with the second flange 44. The butt block 40 is fabricated from a material that is capable of being penetrated by a standard drywall screw, and that is traditionally capable of entering such screws to the extent necessary to perform the steps that are described with reference to FIGURES 3,4 and 5 below. In the preferred embodiment, this material is fiberglass.

Referring now to FIGURE 3, a method of making an improved drywall joint according to a preferred embodiment of the invention will now be described. As FIGURE 3 shows, the butt block 40 that has been described in reference to FIGURE 2 is cut to an appropriate length, and is then positioned behind first and second drywall sheets 12, 14 that are desired to be joined. This is in most cases performed so that the butt block 40 will be positioned in a void that is defined by adjacent joists within a framework for a wall or a ceiling. The butt block 40 is preferably positioned, as shown in FIGURE 3, so that the center axis 56 is substantially aligned with the butt interface 16 between the edges of the drywall sheets 12, 14 that are to be joined. This

alignment may be accomplished by temporarily placing a number of drywall screws into the butt block 40 along the center axis 56 and then sliding the butt block 40 behind one of the drywall sheets 12, 14 until these temporarily set drywall screws abut the edge of the drywall sheets 12, 14.

As FIGURE 3 shows, a first series of drywall screws 60 are used to secure the first flange 42 of the butt block 40 to a portion of the first drywall sheet 12 that is located some distance from the butt interface 16. Immediately thereafter, a second series of drywall screws 62 are similarly driven into the second drywall sheet 14 to secure a corresponding portion of the sheet 14 to the second flange 44 of the butt block 40. These actions cause the first and second surfaces 46, 48 that are described in reference to FIGURE 2 to be drawn tightly against interior surfaces 68, 70 of the respective sheets 12, 14.

At this point in time, the exterior surfaces 64, 66 of the respective drywall sheets 12, 14 are substantially aligned with each other in substantially the same plane as the rest of the drywall sheets 12, 14, much in the manner as is shown in the conventional joint that is depicted in FIGURE 1.

Referring now to FIGURE 4, the preferred embodiment of the invention further includes steps of driving a third series of screws 74 into portions of the first drywall sheet to 12 that are fairly close to the butt interface 16. At about the same time, a fourth series of screws 76 are driven into portions of the second drywall sheet 14 that are fairly close to the butt interface 16. As the screws 74, 76 are tightened, the area of the drywall sheets 12, 14 that are adjacent to the butt interface 16 are drawn into the recess 72 that is defined by the recess defining structure 50 in the butt block 40, thereby creating a secondary recess 78 to be formed on the exterior surface of the joint. In other words, the exterior surfaces 64, 66 of the drywall sheets 12, 14 become pitched inwardly toward the butt interface 16, as is clearly shown in FIGURE 4.

Looking now to FIGURE 5, the secondary recess 78 that is shown in FIGURE 4 will now be filled by a process that includes applying an adhesive mesh joint tape that is of conventional construction over the butt interface 16, and then applying a joint compound 82 to

fill the rest of the secondary recess 78. This is preferably performed so that the resulting joint 86 has a planar exterior surface that lies within the same plane 84 as the main portions of the first and second sheets 12, 14 of drywall.

It is to be understood, however, that even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.